# Utilizing Stable Isotopes to Reconstruct Ocean Circulation During the Last 150 Kyrs in the North Atlantic

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Global climatic conditions are in large part influenced by the formation of North Atlantic Deep Water (NADW). The system of currents that ultimately is responsible for the formation of deep water is critical for its ability to redistribute heat throughout the globe, mitigating the temperature extremes which would naturally arise due to the uneven heating of the earth's surface. Mass discharges of icebergs into the North Atlantic known as Heinrich events may have slowed the formation of the NADW inducing abrupt climate change events which would have been relevant to human timescales. Previous investigations have attempted to elucidate the effect these events have had on the NADW via stable isotope analysis (C-13 adO-18) on cores taken from the eastern and western regions of the North Atlantic. However, few high-resolution stable isotope records within the central north Atlantic have been made; the present investigation will examine 44 samples of Core V30-099 for the benthic foraminifera species *Cibicidoides wuellerstorfi* and then subject these tests to stable isotope analysis. The investigation's results indicate that d18O isotopic values reflect cyclical climatic shifts between glacial and interglacial periods which remain consistent with the Lr04 benthic d18O stack (Lisiecki and Raymo, 2005). Moreover, d13C results are indicative that the NADW circulation oscillated between interglacial and glacial modes of ocean circulation during the last transition (deglaciation) period from the LGM to the Holocene; this oscillation could be indicative of freshwater injection into the North Atlantic by Icebergs from Heinrich events.